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basic imagery interpretation report

# Developments at Selected Soviet Defensive Missile Research Development and Production Facilities (S)



STRATEGIC WEAPONS INDUSTRIAL FACILITIES

BE: Various

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Developments at Selected Soviet Defensive Missile Research, Development, and Production Facilities					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	See below	See below	See below	See below	See below
MAP REFERENCE					
ACIC. USATC, Series 200; sheets 0153-4, 0155-8, 0156-8, 0156-18, and 0167-5; scale 1:200,000					
LATEST IMAGERY USED			NEGATION DATE (If required)		
[ ]			NA		

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Installation Name	Geographic Coordinates	Category	BE No	COMIREX No	NIETB (MRN) No
Kirov Missile & Aircraft Components Plant 32	58-38-33N 049-37-06E	[ ]			
Leningrad Guided Missile Production Plant 458	59-59-31N 030-17-14E				
Moskva Guided Missile & Aircraft Plant Dolgoprudnyy 464	55-55-43N 037-30-28E				
Moskva Guided Missile Production Plant 41	55-49-39N 037-30-24E				
Moskva Guided Missile Research, Development, & Production Plant Khimki 293	55-54-44N 037-27-03E				
Sverdlovsk Guided Missile Production Plant 8	56-52-20N 060-36-58E				

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**ABSTRACT**

1. (S/WN) This report describes recent developments at six Soviet defensive missile research, development, and production facilities. It updates the floorspace reported in three previous NPIC reports on these facilities—[ ]—and provides an update on activity occurring since the latest of these reports [ ]. The report is based on all relevant satellite imagery acquired through the information cutoff date of [ ].

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2. (S/WN) Series production of the SA-10 surface-to-air missile (SAM) was identified at Leningrad Guided Missile Production Plant 458. Emba-03 and Emba-04 missiles were identified in developmental production at Sverdlovsk Guided Missile Production Plant 8. Final assembly of the SA-6/SA-11 transporter-erector-launcher and radar (TELAR) was also identified at Plant 8. A major expansion program was begun at Kirov Missile and Aircraft Components Plant 32 which will probably result in the series production of at least one new naval SAM. A probable suspension of SA-N-3 production, possibly as modifications/upgradings are being developed, was also identified at Kirov. A suspect airframe similar in length to the SA-5 missile but of a different configuration was seen at Moskva Guided Missile Research, Development, and Production Plant Khimki 293 and may be a mockup or prototype for a new defensive missile system. Evidence for the possible production of an additional defensive missile at Moskva Guided Missile Production Plant 41 was identified. Expansion which may be related to impending series production of the SA-11 missile was observed at Moskva Guided Missile and Aircraft Plant Dolgoprudnyy 464.

3. (S/WN) This report includes a location map, 14 annotated photographs, and nine tables.

**INTRODUCTION**

4. [ ] The installations discussed in this report are involved in the production of the following missile systems: SA-2, SA-3/SA-N-1, SA-N-3, SA-4, SA-5, SA-6, SA-7/SA-N-5, SA-8/SA-N-4, SA-10, SA-11, Emba-03, Emba-04, and probably the Galosh ABM 1b<sup>1</sup> defensive missiles. These installations are also involved in the production of the SS-N-15 and SS-NX-16 naval antisubmarine weapons (ASWs). Figure 1 depicts the locations of the six defensive missile installations discussed in this report.

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## BASIC DESCRIPTION

### Kirov Missile and Aircraft Components Plant 32

5. (S/WN) Kirov Missile and Aircraft Components Plant 32 (Figure 2 and Table 1) is the assembly facility for the SA-3/SA-N-1, SA-N-3, SA-7/SA-N-5, and SA-8/SA-N-4.<sup>2</sup>

6. (S/WN) A major expansion program was begun at Kirov 32 during 1980 and 1981. The most prominent feature of the program was the large fabrication/assembly building under construction in the southwest plant area (item 9, Figure 2 and Table 1). Ground preparations for this building were underway in February 1980, and by March 1981 the building was nearly in the midstage of construction. Construction has progressed slowly since March 1981. When complete, the building will add more than 18,700 meters of fabrication and administration/engineering floorspace to the plant. The additional floorspace will probably support the series production of one or more new naval-associated defensive missiles. Although all Soviet naval SAMs in the operational inventory are produced at the plant, the new construction effort is probably in too early a stage, and progressing too slowly, to be completed in time to support series production of the SA-NX-6 and SA-NX-7 missiles. These missiles will probably be coproduced with their respective ground-based counterparts, the SA-10 and SA-11, at Leningrad Guided Missile Production Plant 458 and Moskva Guided Missile and Aircraft Plant 464. The construction activity at Kirov 32 may be related to a follow-on or modification to the SA-N-4 and SA-8 systems. A possible SA-N-4 follow-on or modified SA-N-4 has been installed on the second Kirov-class nuclear-powered guided missile cruiser (CGN) and is on the new Udaloy-class guided missile destroyer (DDG). The test program for a possible SA-8 follow-on or modified SA-8 was observed underway at Emba Missile Test Center [redacted] in January 1981.

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7. (S/WN) Production of the SA-N-3 missile apparently ceased at Plant 32 during 1980 and 1981. During this time period, no more than three SA-N-3 canisters were seen at the plant at any time. Although the role of the SA-N-3 will be performed by the SA-NX-6 on newer vessels,<sup>3</sup> SA-N-3 missiles will still be necessary for resupply of existing SA-N-3-equipped vessels. The lack of SA-N-3 canisters at Kirov may mean that the Soviets have decided to suspend production of the SA-N-3 while developing an SA-N-3 variant to counter cruise missiles and other more current aerodynamic threats. Evidence for a possible SA-N-3 modification program was observed in 1979 at Moskva Guided Missile Research, Development and Production Plant Khimki 293.<sup>4</sup>

8. (S/WN) Although confirmed SA-8/SA-N-4 canisters were not observed at Kirov during 1980 or 1981, canvas-covered canisters/crates of a size compatible with the SA-8/SA-N-4 missile were observed regularly in the missile canister storage yard (Figure 3). Small numbers of similar-sized crates that were not covered by canvas were also observed in the canister storage yard and in front of a probable assembly building in the south plant area.



FIGURE 1. LOCATIONS OF SOVIET DEFENSIVE MISSILE RESEARCH, DEVELOPMENT, AND PRODUCTION FACILITIES

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9. (S/WN) The numbers of SA-3/SA-N-1 canisters observed at Plant 32 varied widely (from 104 to 383) during 1980 and 1981 (Table 2) as series production of the missile continued. Canister counts were low during the first and second quarters of 1980. Canister counts were higher in 1981.

10. (S/WN) The [REDACTED] four-section shipping container<sup>4</sup> and the two-toned, [REDACTED] meter-long probable component crates were still observed at Kirov during the reporting period.<sup>5</sup> Similar two-toned crates have been seen at two solid rocket motor-associated production facilities, Biysk Solid Motor Production Plant II [REDACTED] and Kuybyshev Missile and Aircraft Components Plant 207 (BE [REDACTED]). The grouping of the three different-sized crates at all three plants suggests that the crates are related and may contain propulsion components for the same missile system. It has not been determined which of the missiles assembled at Plant 32 are associated with these crates.

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### Leningrad Guided Missile Production Plant 458

11. (S/WN) Leningrad Guided Missile Production Plant 458 (Figure 4 and Table 3) is the assembly facility for the SA-5 and SA-10.

12. (S/WN) Production of the SA-10 was identified at Plant 458 in early 1980. From mid-March through late July 1980, from 10 to 19 SA-10 missile canisters were observed in the SA-5 crating and storage area (Figure 5). The canisters were observed both in open storage and under a camouflage net in front of a probable crate shop building. By late July, a security screen had been placed in front of the nearby 142-meter, net-covered structure where SA-5 sustainer canisters have traditionally been stored. It was not evident until August 1980 that additional SA-10 canisters were being stored in the net-covered structure behind the security screen. As many as 28 SA-10 canisters, 14 of which were beneath the netting, were observed on imagery of [REDACTED]. 35 SA-10 canisters, a high count, were observed in open storage and more were probably in the 142-meter structure.

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13. (S/WN) The number of SA-5 sustainer canisters observed at Plant 458 remained relatively constant during 1980 and 1981. Production of the SA-5 is not expected to decline in the near future, as missiles will be needed to support a continuing SA-5 test and development program, to replace older missiles, and to support new SA-5 deployments.<sup>6</sup> As of the end of the reporting period, three new SA-5 launch complexes and three new sites at existing complexes are under construction in the USSR.

14. (S/WN) Construction completed during the period at Plant 458 was on a relatively small scale. One of the more prominent structures completed, which is probably related to the SA-10, was a test/checkout building (item 13, Figure 4 and Table 3). A large building was under construction in the west plant area (item 28), and earth-moving activity in the northwest corner of the plant suggests that another large building may be constructed in the future. Additional floorspace may be needed to meet future SA-10 production requirements, as well as those of its naval counterpart, the SA-NX-6.

### Moskva Guided Missile and Aircraft Plant Dolgoprudnyy 464

15. [REDACTED] Moskva Guided Missile and Aircraft Plant Dolgoprudnyy 464 (Figure 6 and Table 4) is the production facility for the SA-6. [REDACTED]

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16. [REDACTED] Very low numbers of SA-6 canisters were observed at Plant 464 during the first quarter of 1980. After these low counts of from 130 to 160 canisters, the canister counts returned to more normal levels (high 400s to low 700s) in the summer and fall of 1980 and into the spring of 1981. The dramatic drop in canister counts during the first quarter of 1980 may mean that large numbers of empty canisters were brought into the production buildings during an accelerated SA-6 production program, probably of the improved SA-6 missile,<sup>8</sup> which has been field-deployed with SA-6b regiments since at least December 1979.

17. [REDACTED] When complete, additions to buildings under construction at Moskva 464 will provide 3,600 square meters of additional production floorspace. The additions are being made to existing fabrication and assembly buildings. As Plant 464 is the only known producer of the SA-6, which is the forerunner of the SA-11, [REDACTED]

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[REDACTED] The construction at Plant 464 may be associated with impending series production of the SA-11 and probable coproduction of its naval counterpart, the SA-NX-7.

### Moskva Guided Missile Production Plant 41

18. [REDACTED] Moskva Guided Missile Production Plant 41 (Figure 7 and Table 5) is the assembly facility for the SA-2. Smaller-than-usual numbers of SA-2 sustainer canisters were observed at Plant 41 in 1980 and 1981, suggesting a low level of SA-2 production. The count ranged from approximately 500 to 900 canisters (Table 6); 1,100 had been the usual count during the previous three years. A production decrease would not be unexpected, because deployment of the SA-2 within the USSR has stabilized<sup>9</sup> and many existing SA-2 sites are being converted into SA-10 sites.<sup>10</sup> Furthermore, there is evidence that foreign customers are becoming dissatisfied with the SA-2 system.<sup>2</sup> Notwithstanding this apparent production decrease, a program to increase production/assembly floorspace was underway at Plant 41 during the reporting period. The construction of a high-bay probable shop building (Item 3, Figure 7 and Table 5) and an addition to an existing assembly/shop building (item 5) will increase

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production floorspace at Plant 41 by 4,603 square meters. Additional activity was observed in the transshipment yard, where an excavation for a probable new building was being dug. This expansion activity is evidence that Plant 41 may be engaged in the production of an additional defensive missile. Final

This new expansion activity may be to accommodate assembly of the silo-launched version of the Galosh ABM, which has been undergoing flight testing and will probably be deployed, along with the SH-08 ABM interceptor, in silos around Moscow.<sup>11</sup>

### Moskva Guided Missile Research, Development, and Production Plant Khimki 293

19. Moskva Guided Missile Research, Development, and Production Plant Khimki 293 (Figure 8 and Table 7) is believed to be involved in the research and development of Soviet defensive missiles. The Grushin experimental design bureau (OKB) is located at this Plant.<sup>12</sup>

20. (S/WN) On a suspect airframe (Figure 9) was observed at Moskva 293 in the shadow of a subassembly/fabrication building. The approximate overall length of the object was meters. Delta-shaped possible control surfaces were near the midportion, and possible control surfaces with clipped corners were on the aft end. The suspect airframe is close to the same length as the SA-5 missile. The location and configuration of the possible control surfaces, however, indicate that the suspect airframe is not closely related to the SA-5. The object may be the prototype or mock-up for a new missile or an aerodynamic test object. A similar object, in length and in diameter, was observed on imagery of (Figure 10) on a dolly near an assembly building; however, no control surfaces were visible on the object.

21. (S/WN) Unidentified canisters measuring between in length and meter crates were at Moskva 293 in July 1980 (Figure 10). The containers were along the rail line in the plant transshipment area. An unusually high level of rail activity was also observed in July. On imagery of 20 railcars were observed, including one 24-meter, missile-associated railcar.

22. (S/WN) Construction during the reporting period at Plant 293 resulted in the completion of an addition (item 3, Figure 8 and Table 7) to the large assembly building at the south end of the plant.

**Table 1.**  
**Additions to Kirov Missile and Aircraft Components Plant 32**

(Items keyed to Figure 2)

*This table in its entirety is classified SECRET/WNINTEL*

Item	Description	Dimensions (m)			Floorspace (sq m)	Remarks
		L	W	H		
1	Admin sect				455	2 stories
2	Admin/engr bldg				1,181	3 stories
3	Assem sect				1,032	
4a	Shop sect				356	
b	Shop sect				124	
5	Bldg foundation					
6	Stor bldg				400	
7	Add to fab bldg				—	Ucon
8a	Admin/engr sec				1,329	3 stories
b	Shop sect				635	
c	Shop sect				122	
d	Shop sect				107	
9a	Fab/assem sect				—	Ucon
b	Admin/engr sect				—	Ucon
10	Bldg foundation				—	
Total floorspace of completed additions					855	
					3,225	
					480	
					4,590	

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**Table 3.**  
**Additions to Leningrad Guided Missile Production Plant 458**

(Items keyed to Figure 4)

This table in its entirety is classified SECRET//WNINTEL

Item	Description	Dimensions (m)			Floorspace (sq m)	Remarks
		L	W	H		
1	Stor bldg				198	
2	Stor bldg				105	
3	Spt bldg				174	
4	Admin/engr sect				348	3 stories
a	Admin/engr sect				348	
b	Admin/engr sect				866	
c	Admin/engr sect				348	
5	Stor tank				1,943	
6	Spt bldg				90	
7	Spt bldg				1,025	2 stories
8	Spt bldg				205	
9	Spt sect				181	
10	Stor bldg				206	
11	Stor/spt bldg				196	
12	Prob workshop					
a	Sect				452	
b	Sect				376	A sect extends above sect b
13	Test/checkout bldg				615	
14	Stor sect				526	
15	Stor bldg				455	
16	Stor bldg					
a	Stor sect				317	
b	Stor sect				468	
c	Spt sect				—	Ucon
d	Spt sect				—	Ucon
17	Stor bldg				459	
18	Stor bldg				459	
19	Stor shed				3,806	
20	Stor bldg				250	
21	Stor bldg				250	
22	Stor bldg				342	
23	Stor/spt bldg				256	
24	Stor/spt bldg				256	
25	Stor/spt bldg				256	
26	Stor/spt bldg				289	
27	Set of foundations				—	
28	Unid bldg				—	Ucon
29	Prob veh maint bldg				537	
Total floorspace of completed additions					10,212	
					455	
					3,644	
					14,311	

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**Table 2.**  
**SA-3/SA-N-1 and SA-N-3 Canisters at**  
**Kirov Missile and Aircraft Components Plant 32**

This table in its entirety is classified SECRET//WNINTEL

Date of Imagery	SA-3/ SA-N-1 Canisters	SA-N-3 Canisters	Interpretability of Imagery
	104	2 (1 prob)	Good
	131	2 (1 prob)	Fair
	171	3 (1 prob)	Good
	136	3 (1 prob)	Good
	160	3 (1 prob)	Good
	135	—	Fair
	232	1 prob	Good
	241	1 prob	Good
	198	—	Fair
	281	—	Fair
	241	—	Fair
	341	—	Fair
	301	—	Fair
	303	—	Excellent
	383	—	Good
	168	—	Good
	255	—	Excellent
	281	—	Excellent
	253	—	Good
	237	—	Fair
	248	—	Good
	267	—	Good
	232	—	Good
	299	—	Fair
	347	—	Fair

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**Table 4.**  
**Additions to Moskva Guided Missile and Aircraft Plant Dolgoprudnyy 464**  
 (Items keyed to Figure 6)

*This table in its entirety is classified SECRET/WNINTEL*

Item	Description	Dimensions (m)			Floorspace (sq m)	Remarks			
		L	W	H					
1	Poss final assem sect				1,009	Ucon			
2	Stor bldg				—				
a	Admin/spt sect				285	3 stories			
b	Stor sect				571				
3	Assem sect				2,589	Ucon			
4	Stor bldg				473				
5	Stor bldg				470				
6	Stor bldg				479				
7	Admin/engr sect				2,657	4 stories			
8	Spt sect				606	2 stories			
9	Stor bldg				—				
a	Stor sect				562				
b	Admin/spt sect				189	2 stories			
10	Stor bldg				—				
a	Admin/spt sect				202	2 stories			
b	Stor sect				360				
11	Spt bldg				800				
12	Stor bldg				—				
a	Admin/spt sect				109	2 stories			
b	Stor sect				408				
Total floorspace of completed additions					5,764				
					2,407				
					3,598				
					11,769				

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Table 6.  
SA-2 Canisters at Moskva Guided Missile Production Plant 41

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Date of Imagery	SA-2 Canisters by Area*	Total SA-2 Canisters	Interpretability of Imagery	Remarks
	A 288 B 188 C 131 D 0 E 109	714	Fair	
	A 292 B 180 C 148 D 0 E 148	748	Fair	
	A 287 B 84 C 217 D 0 E 88	654	Good	
	A 240 B 132 C 101 D 0 E 82	555	Fair	
	A 469 B 185 C 128 D 0 E 34	778	Good	Area E being cleared for excavation. All canisters in area were under bridge crane
	A 831 B 200 C 190 D 0 E 42	923	Good	
	A 340 B 149 C 145 D 0 E 19	653	Good	
	A 317 B 188 C 113 D 0 E 11	597	Good	

\* See Figure 7 for delineation of these areas

Sverdlovsk Guided Missile Production Plant 8

23. (S//NF) Sverdlovsk Guided Missile Production Plant 8 (Figure 11 and Table 8) is the final assembly facility for the SA-4 missile and the transporter-erector-launcher (TEL)/TELAR associated with the SA-4, SA-6, and SA-11 systems. Also, developmental Emba-03 and Emba-04 missiles are produced and the SS-N-15 and SS-N-16 naval ASMs are assembled at the plant.

24. (S//NF) Final assembly of the SA-6/SA-11 TELAR was identified at Plant 8 in July 1980 when two TELAR chassis were in the SAM TEL transshipment yard (Figure 12). An overall increase in vehicles observed in the yard beginning in July 1980 suggests that at least some of the vehicles partially obscured by a shelter in the yard are also TELAR chassis. By February 1981, TELAR chassis were also observed in the canister storage and transshipment yard (Figure 13) presumably because the SAM TEL transshipment yard was full. A maximum of 11 TELAR chassis was identified at Plant 8 during 1980 and 1981.

25. (S//NF) Developmental production of a probable antitactical ballistic missile, undergoing research and development testing at Emba Missile Test Center, was confirmed at Sverdlovsk Plant 8 in 1980.

Table 7.  
Additions to Moskva Guided Missile Research, Development, and Production Plant Khinki 293

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(Items keyed to Figure 8)

Item	Description	Dimensions (m)		Floorpace (sq m)	Remarks
		L	W		
1	Blor Tanks (2)			71.2	Dimensions for each tank
2	Spot bldg			140	
3	Assem sect			1,064	
4	Cooling tower			—	4 rails
5	Cooling tower			—	2 rails
6	Prob assem wing bldg			—	
a	Prob assem sect			1,064	
b	Prob orig sect			326	
c	Vertical tank			—	
d	Horizontal tank			—	
e	Horizontal tank			—	
7	Shipping/reving bldg			843	
8	Spot bldg			465	
9	Spot bldg			—	
a	Spot sect			26	
b	Spot sect			36	
10	Spot bldg			78	
	Total floorpace of completed additions			969	
				1,806	
				1,064	
				3,839	

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Table 8.  
Additions to Sverdlovsk Guided Missile Production Plant 8

(Items keyed to Figure T1)

This table in its entirety is classified SECRET//SI//NFTEL

Item	Description	Dimensions (m)			Floorspace (sq m)	Remarks
		L	W	H		
1	Stor bldg				1 721	5 stories
a	Admin sect				1 080	
b	Stor sect					
c	Stor bldg				2 388	
d	Admin sect				3 787	5 stories
e	Loading dock				81	
f	Loading dock				39	
3	Cooling tower #30				—	
4a	Pumphouse sect				68	
b	Pumphouse sect				177	
c	Stor bldg				3 088	
d	Stor bldg				48	
7	Shower/air sect				471	
8	Admin wing bldg				1 438	4 stories
9	Stor bldg				1 828	
10	Post sec bldg				—	Udon
11	Foundation				—	Udon
12	Util structure				—	Udon
13	Admin bldg				1 209	3 stories
14	Admin wing bldg				—	Udon
15	Admin wing bldg				2 891	5 stories
a	Admin wing sect				108	
b	Stor sect				934	
16	Stor bldg				768	
17	Stor bldg				1 533	
18	Stor bldg				—	
19	Foundation				17 116	
	Total floorspace of proposed additions				8 487	
					23 872	

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**Table 9.**  
**SA-4 Missile Canisters and SAM TELs/TELARs\* at**  
**Sverdlovsk Guided Missile Production Plant 8**

*This table in its entirety is classified SECRET/NNINTEL*

Date of Imagery	SA-4 Sustainer Canisters	SA-6/SA-11 TELARs	Total SAM TELs/TELARs**	Interpretability of Imagery	Remarks
	90	—	10	Good	
	58	—	17	Fair	
	91	—	9 (at least)	Fair	
	90	—	10	Fair	
	84	—	8	Fair	
	62	—	26		
			(17 prob, protruding from shed)	Good	
	74	—	10	Fair	
	90	—	25		
			(6 prob, protruding from shed)	Fair	
	64	—	13	Fair	
	76	—	25	Fair	
	84	—	24	Good	
	73	—	22	Fair	
	77	—	23	Good	
	57	—	26	Good	
	30	—	21		
			(3 prob, protruding from shed)	Good	
	65	—	24	Good	
	49	—	24	Good	
	47	—	15	Fair	
	63	—	28	Good	
	42	2	32	Good	
	57	—	26	Fair	
	58	1 prob	33	Good	
	36	—	44	Fair	
			(23 prob, protruding from shed)		
	48	8 prob	41	Fair	
	37	1	30	Good	
	56	8 (7 prob)	42	Good	
	72	—	37	Good	
	84	—	34	Fair	
	134	—	334	Fair	
	130	—	36	Fair	
	177	4	37	Fair	4 TELARs in canister yard
	96	6 prob	36	Fair	6 prob TELARs in canister yard
	102	8	46	Fair	8 TELARs in canister yard
	104	8	43	Fair	8 TELARs in canister yard
	92	8	42	Good	8 TELARs in canister yard
	128	8	35	Good	8 TELARs in canister yard
	122	8	45	Good	8 TELARs in canister yard
	110	8	42	Good	8 TELARs in canister yard

\*SAM TELs/TELARs observed at Plant 8 are primarily chassis without launch mechanisms.

\*\*Although the majority of TELs appears to be SA-6, small numbers of SA-4 TELs may also be present. TEL/TELAR counts are for TEL transshipment yard unless otherwise noted.

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**Table 9. (continued)**  
**SA-4 Missile Canisters and SAM TELs/TELARs\* at**  
**Sverdlovsk Guided Missile Production Plant 8**

*This table in its entirety is classified SECRET/WNINTEL*

Date of Imagery	SA-4 Sustainer Canisters	SA-6/ SA-11 TELARs	Total SAM TELs/TELARs**	Interpretability of Imagery	Remarks
	97	8	66	Good	8 TELARs & 11 SA-6 TELs in canister yard
	86	10 (at least; 2 prob)	70	Excellent	8 TELARs & 11 SA-6 TELs in canister yard
	96	6	63	Fair	6 TELARs & 13 SA-6 TELs in canister yard
	114	11 (at least)	73	Excellent	6 TELARs & 15 SA-6 TELs in canister yard
	80	5 (at least)	52	Fair	18 TELs/TELARs in canister yard
	89	—	61	Fair	19 TELs/TELARs in canister yard
			(4 prob, protruding from shed)		
	93	—	47	Fair	17 TELs/TELARs in canister yard
	93	—	75	Fair	22 SA-6 TELs in canister yard
	109	—	71	Fair	23 SA-6 TELs in canister yard
	120	—	67	Fair	21 TELs/TELARs in canister yard
	72	5	62	Good	14 TELs/TELARs in canister yard
	72	—	49	Fair	11 TELs/TELARs in canister yard
	122	—	36	Fair	6 TELs/TELARs in canister yard
	74	—	37	Fair	6 TELs/TELARs in canister yard
	104	—	35	Fair	1 SA-6 TEL in canister yard
	108	5	38	Good	No TELs/TELARs in canister yard
	141	—	34	Poor	No TELs/TELARs in canister yard

\* SAM TELs/TELARs observed at Plant 8 are primarily chassis without launch mechanisms.

\*\* Although the majority of TELs appears to be SA-6, small numbers of SA-4 TELs may also be present. TEL/TELAR counts are for TEL transshipment yard unless otherwise noted.

Although small numbers of the [ ] Emba-04 canister (Figure 13) had been observed in the canister storage yard since May 1979, the identification of these canisters as Emba-04 canisters was not possible until identical canisters were sighted at Emba for the first time in May 1980. From four to eight Emba-04 canisters have been observed at Plant 8.

26. (S/WN) Developmental production of the Emba-03 missile was also identified at Sverdlovsk Plant 8 during 1980. Small numbers of [ ] Emba-03 canisters have been at Sverdlovsk since at least June 1979, but their almost identical appearance to the thinner and slightly longer SS-N-15 ASW canister has precluded accurate counts. Of the more than 50 Emba-03/SS-N-15 canisters regularly observed at Sverdlovsk (Figure 13) during 1980 and 1981, the majority were probably for the SS-N-15, which has been in series production at the plant since the late 1960s.

27. (S/WN) Although it is expected that the Emba-03 system will supplement or replace the SA-4 system,<sup>13</sup> several developments at Sverdlovsk indicate continued use of the SA-4. After a period of lower-than-usual (30 to 91) SA-4 sustainer canister counts throughout most of 1980, the number of canisters started to increase in December and remained high throughout 1981, peaking in February with over 170 canisters observed (Table 9). In July 1981, at Sverdlovsk Artillery Test Range [ ] the test facility for Sverdlovsk Plant 8, an SA-4 TEL was observed for the first time in recent years. The continued production of the SA-4 missile may presage a wider deployment of the SA-4 system with non-Soviet Warsaw Pact forces.

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28. (S/WN) Small numbers of an unidentified type of canister [ ] in length and from [ ] in diameter (Figure 14) were observed at Plant 8 both inside and immediately outside the missile canister yard. Canisters of this size, particularly with this large a diameter, have not been associated with any known tactical defensive missile or naval missile system.

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29. (S/WN) Unidentified canisters of a different type were seen at Plant 8 in somewhat larger numbers (Figures 11 and 15). The [ ] canister is similar in appearance to the SA-4 booster canister but is slightly longer and narrower. The canister closely resembles a canister that has been observed at four naval facilities: Litsa Guba Naval Missile Storage [ ] Feodosiya Torpedo and ASW Weapons Storage Facility [ ], Severodvinsk Naval Missile Support Facility [ ], and Severomorsk Weapons Storage Facility [ ].

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30. (S/WN) Construction at Plant 8 during 1980 and 1981 was a continuation of the major expansion program begun in the mid-1970s, and is probably related to the future series production of the Emba-03 and Emba-04. During the 2-year period, buildings providing 6,500 square meters of floorspace were completed, and additional craneways and a new section of rail line were constructed.

## REFERENCES

## IMAGERY

(S/WN) All relevant satellite imagery acquired through [ ] was used in the preparation of this report.

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## MAP OR CHART

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## REQUIREMENT

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